

SI3000 LUMIA G16

Superior Compact GPON OLT

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Iskratel SI3000 Lumia G16 is a compact, 1RU GPON OLT that delivers comprehensive network services, performance and scale, optimized for residential and business access networks. Intelligent fiber-access OLT provides sixteen GPON OLT ports together with four 10GE and six GE uplink interfaces. Using the latest-generation 100 Gbps network processor, it operates in flow-based mode and is SDN-enabled.

SI3000 Lumia G16 supports flexible 3-level hierarchical QoS which allows specifying QoS behavior at multiple policy levels. Every level provides a high degree of granularity in traffic management. Hierarchical policies can be applied and chained at GPON OLT port level, ONT (subscriber level) and at service level. Depending on policy rules, various traffic management techniques, such as shaping, policing, classification, and restricting are provided.

Flexible VLAN tagging in the SI3000 Lumia

G16 enables cost-effective 1:1 (VLAN per user) architectures, as the operator can use simpler ONT devices with a common ONT configuration.

SI3000 Lumia G16 supports 16 OLT ports and wire-speed throughput, intelligent traffic processing, and ONT split ratio up to 1:128. While bandwidth demands grow, service disruption becomes increasingly more unacceptable; for traffic protection, product uses two 20GE uplink pairs (LAG) for 1+1 redundancy. For power-supply protection,

product uses two DC power inlets (-48 V), while an external AC/DC converter is available for AC power supply. To facilitate integration into street cabinets, the product offers event alarms for open door, power-module failure, AC mains failure and user-defined alarms.

Fast, flexible traffic processing (BBF TR-101 and TR-156 compliant) and low power consumption are provided using the latest-generation 100 Gbps network processor.

KEY FEATURES AND BENEFITS

- Standalone 1RU GPON OLT
- 16 GPON OLT interfaces
- SDN-enabled architecture
- 1:128 split ratio
- TR-101 and TR-156 compliant
- Hierarchical 3-level QoS support
- Selective Q-in-Q and flexible tagging
- User-friendly CLI with service profiles
- Standards-compliant OMCI management
- Unified OLT-ONT management with mass operations
- RESTCONF API for easy integration in OSS/BSS



Network interface	
GPON interface	16x GPON (2.5/1.25 Gbps)
10GE Ethernet	4x 10GE SFP+
1GE Ethernet	4x GE SFP + 2x GE SFP/RJ-45 (Combo)
PON interface	
GPON interface	G.984.x GPON, G.988 OMCI, TR-247 GPON certification OLT interop, TR-101, TR-156, AES, FEC, DBA
OLT port characteristics	1:128 split ratio, 4,096 GEM port IDs, 1,024 T-CONT, 128 ONT
Switching and performance	
Switching	IPv4, IPv6, Support for packets up to 1600 bytes
Switching capacity	86 Gbps
MAC table size and learning	64k entries, learning rate 5,000 MAC/s
Link aggregation	Static LAG
Ring resiliency	ERPS (G.8032V2)
Loop prevention	802.1w RSTP, 802.1s MSTP
VLAN	4,094 VLANs, Port based/Native VLAN, Remarking, Provider-edge bridging (802.1ad, Selective Q-in-Q)
Synchronization	Synchronous Ethernet, Stratum3E, IEEE 1588v2 Precision time protocol
Service models	
VLAN service models	1:1 and N:1 (TR-156), 8k VLAN remarking rules
IP multicast	2k groups, IGMP v2/v3 snooping with suppression, Fast leave, IGMP filtering, IGMP proxy, Multicast CAC, Multicast group ACL, Static groups, MVR, IGMP forking, Static client
Quality of service	Hierarchical QoS, L2-L4 classification (PCP/CoS, MAC, VLAN, ToS/DSCP, DiffServ, IP, TCP/UDP port), marking, policing, queuing (32 per ONT, RED, Tail-drop), scheduling (Strict, WFQ, LLQ), shaping, CAC
Traffic management	Dynamic buffer management, 8k queues with dynamic allocation
Software-defined networking	Flow awareness L1-L4, Per-service flow policing and shaping, Profile-based management
Security	
User-port isolation	Protected port, Private port
Filtering and DoS prevention	Wire-speed L2-L4 IPv4/IPv6 ACL, Telnet/SSH filtering, App rate limiting, Selective overload protection
Storm control	Per ONT packet-rate control for broadcast, multicast and unicast DLF traffic
MAC spoofing and flooding	Port security, Port security per VLAN, MAC source guard
Port-based security	DHCP snooping, IP source guard, Dynamic ARP inspection
Unauthorized DHCP server	Prevention with DHCP filtering, DHCP options 60 and 43 (for ACS)
User-line traceability	PPPoA, DHCP RA with flexible option 82, DHCPv6 RA with interface ID option
Management	
Local management console	RS232 (over µUSB connector, adapter needed)
Management interfaces	CLI (Console, Telnet, SSH), SNMP, Web (RESTCONF) element manager
IP assignment	DHCP or static
Management protocols	SNMPv2c, SNMPv3, ACS client, Radius client, TACACS+ client, Telnet client, SSH client
Firmware upgrade	FTP, ACS, Dual firmware image
Time synchronization	SNTP
Monitoring	Performance and quality monitoring, RMON, System resource monitoring, Port mirroring, Online debug
Event collection	Event log, Error log, Syslog client
Counters and statistics	
OLT port	Signal strength indication (RSSI), Digital diagnostic monitoring (DDM)
OLT port alarms	LOS, PON link downstream invalid packets threshold, PON link downstream Rx CRC error threshold
ONT alarms	LOSi, SFi, SDi, LCDGi, RDi, SUFi, DFi, LOAi, DGi, LOAMi, MISi, PEEi, Inactive ONT (OMCC error)
Traffic counters	Per VLAN per ONT, Control-protocol counters, Traffic-type counters
Mechanical, Environmental, Power Supply	
Physical dimensions	H 45 mm (1RU) x W 447 mm x D 235 mm, ETSI or 19" rack
Safety	EN 62368-1:2014, UL 60950-1/CSA C22.2, 60950-1:2007/AMD2:2014
EMC	EN 300 386 V1.6, FCC part 15 class B, EN 55032:2012, EN 55035:2017, EN 61000-3-2:2014, EN 61000-3-3:2013
Storage conditions	ETS 300 019-1-1, class 1.2, temperature -50°C to +70°C, RH 10-100%
Transport conditions	ETS 300 019-1-2, class 2.3
Operating conditions	ETS 300 019-1-3, class 3.1E, temperature -40°C to +65°C, RH 5-90% non-condensing
Voltage and consumption	From -42 VDC to -60 VDC SELV/ES1, 76 W (typ. with 16 SFPs)
Ordering code Description	
LBB-G16	Lumia G16, GPON 1RU, 16 OLT ports enabled, incl. 4x 10GE SFP+ ports, 4x GE SFP ports, 2x GE Combo (SFP/RJ-45) ports, SyncE/PTP, 512 subscriber capacity license. Does not include SFP/SFP+ transceivers
Optional accessory	
LBB-G16-PSU	Laptop-style Class VI 120 W @ 48 VDC power supply with US line cord & 2-position DC terminals, medical grade & cUL approved. For non-standby powering of a single input of the LBB-G16 OLT



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